

Growth of *Desulfovibrio vulgaris* Hildenborough Wild Type, Fur, PerR, and Zur Mutants, and Its Lysogenic Phages

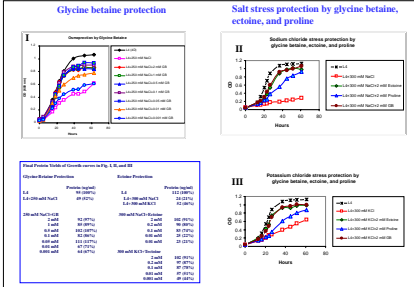
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Introduction:

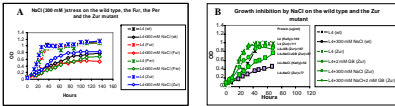
1. Studies of the basic growth physiology and morphology of *D. vulgaris* under normal and stress conditions.
2. Investigation of the endogenous phage of *D. vulgaris*.

1. Salt stress and glycine betaine, ectoine, and proline protection



2. Salt Stress of the wild type, Fur, Per, and Zur mutant

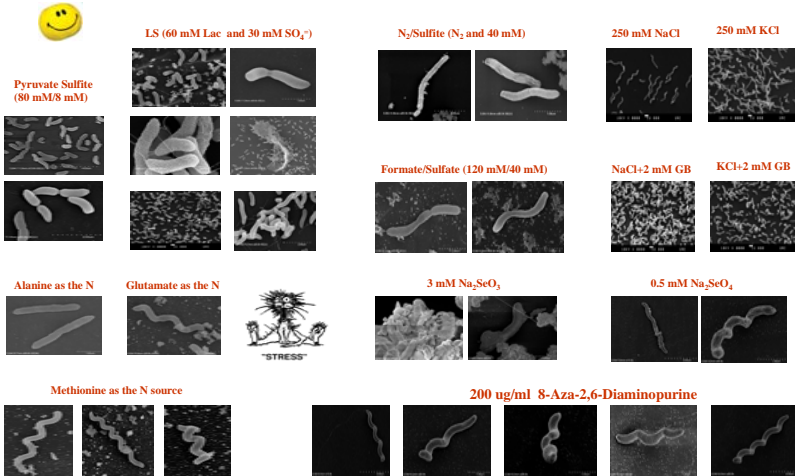
- A. The Fur and Per mutants are more sensitive to salt stress.
- B. The Zur mutant is more resistant to salt stress.



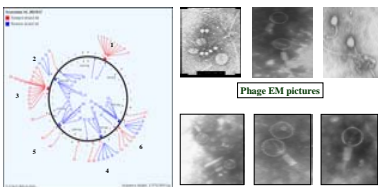
Salt stress Conclusions:

1. Glycine betaine, ectoine, and proline protect against NaCl and KCl stresses, but not sorbitol stress.
2. Glutamate protects salt stress slightly.
3. The following chemicals do not protect against salt stress: Choline, Glycine, Sarcosine (Methyl glycine), Dimethylglycine, Glycerol, Aspartate, and Tryptophan.
4. The salt stress and glycine betaine protection are no different under iron limitation (60, 30, 20, 10, 6, 3, 1, or 0 μ M ferrous chloride added).
5. The lactate consumption rate of the wild type was 0.58 mM lactate/ μ g protein.
6. The consumption rates for NaCl and KCl stressed cultures were 0.77 and 0.71 mM lactate/ μ g protein, respectively.
7. The Fur and PerR mutant are more sensitive to salt stress, but the Zur mutant is more resistant.

7. EM Pictures



8. *D. vulgaris* Phages



9. Lysogenic strains of DP4

Spontaneous phage released from <i>D. vulgaris</i> post stationary phase cultures			Plaque assay of the lysogenic strains of DP4 (PFU/ml) ^{***}			
			L88-33	L88-66	L88-17	DP4
6 hr	0	0	0	0	0	0
12 hr	0	0	0	0	0	0
18 hr	0	0	0	0	0	0
24 hr	0	0	0	0	0	0
30 hr	0	0	0	0	0	0
36 hr	0	0	0	0	0	0
42 hr	0	0	0	0	0	0
48 hr	0	0	0	0	0	0
54 hr	0	0	0	0	0	0
60 hr	0	0	0	0	0	0
66 hr	0	0	0	0	0	0
72 hr	0	0	0	0	0	0
78 hr	0	0	0	0	0	0
84 hr	0	0	0	0	0	0
90 hr	0	0	0	0	0	0
96 hr	0	0	0	0	0	0
102 hr	0	0	0	0	0	0
108 hr	0	0	0	0	0	0
114 hr	0	0	0	0	0	0
120 hr	0	0	0	0	0	0
126 hr	0	0	0	0	0	0
132 hr	0	0	0	0	0	0
138 hr	0	0	0	0	0	0
144 hr	0	0	0	0	0	0
150 hr	0	0	0	0	0	0
156 hr	0	0	0	0	0	0
162 hr	0	0	0	0	0	0
168 hr	0	0	0	0	0	0
174 hr	0	0	0	0	0	0
180 hr	0	0	0	0	0	0
186 hr	0	0	0	0	0	0
192 hr	0	0	0	0	0	0
198 hr	0	0	0	0	0	0
204 hr	0	0	0	0	0	0
210 hr	0	0	0	0	0	0
216 hr	0	0	0	0	0	0
222 hr	0	0	0	0	0	0
228 hr	0	0	0	0	0	0
234 hr	0	0	0	0	0	0
240 hr	0	0	0	0	0	0
246 hr	0	0	0	0	0	0
252 hr	0	0	0	0	0	0
258 hr	0	0	0	0	0	0
264 hr	0	0	0	0	0	0
270 hr	0	0	0	0	0	0
276 hr	0	0	0	0	0	0
282 hr	0	0	0	0	0	0
288 hr	0	0	0	0	0	0
294 hr	0	0	0	0	0	0
300 hr	0	0	0	0	0	0
306 hr	0	0	0	0	0	0
312 hr	0	0	0	0	0	0
318 hr	0	0	0	0	0	0
324 hr	0	0	0	0	0	0
330 hr	0	0	0	0	0	0
336 hr	0	0	0	0	0	0
342 hr	0	0	0	0	0	0
348 hr	0	0	0	0	0	0
354 hr	0	0	0	0	0	0
360 hr	0	0	0	0	0	0
366 hr	0	0	0	0	0	0
372 hr	0	0	0	0	0	0
378 hr	0	0	0	0	0	0
384 hr	0	0	0	0	0	0
390 hr	0	0	0	0	0	0
396 hr	0	0	0	0	0	0
402 hr	0	0	0	0	0	0
408 hr	0	0	0	0	0	0
414 hr	0	0	0	0	0	0
420 hr	0	0	0	0	0	0
426 hr	0	0	0	0	0	0
432 hr	0	0	0	0	0	0
438 hr	0	0	0	0	0	0
444 hr	0	0	0	0	0	0
450 hr	0	0	0	0	0	0
456 hr	0	0	0	0	0	0
462 hr	0	0	0	0	0	0
468 hr	0	0	0	0	0	0
474 hr	0	0	0	0	0	0
480 hr	0	0	0	0	0	0
486 hr	0	0	0	0	0	0
492 hr	0	0	0	0	0	0
498 hr	0	0	0	0	0	0
504 hr	0	0	0	0	0	0
510 hr	0	0	0	0	0	0
516 hr	0	0	0	0	0	0
522 hr	0	0	0	0	0	0
528 hr	0	0	0	0	0	0
534 hr	0	0	0	0	0	0
540 hr	0	0	0	0	0	0
546 hr	0	0	0	0	0	0
552 hr	0	0	0	0	0	0
558 hr	0	0	0	0	0	0
564 hr	0	0	0	0	0	0
570 hr	0	0	0	0	0	0
576 hr	0	0	0	0	0	0
582 hr	0	0	0	0	0	0
588 hr	0	0	0	0	0	0
594 hr	0	0	0	0	0	0
600 hr	0	0	0	0	0	0
606 hr	0	0	0	0	0	0
612 hr	0	0	0	0	0	0
618 hr	0	0	0	0	0	0
624 hr	0	0	0	0	0	0
630 hr	0	0	0	0	0	0
636 hr	0	0	0	0	0	0
642 hr	0	0	0	0	0	0
648 hr	0	0	0	0	0	0
654 hr	0	0	0	0	0	0
660 hr	0	0	0	0	0	0
666 hr	0	0	0	0	0	0
672 hr	0	0	0	0	0	0
678 hr	0	0	0	0	0	0
684 hr	0	0	0	0	0	0
690 hr	0	0	0	0	0	0
696 hr	0	0	0	0	0	0
702 hr	0	0	0	0	0	0
708 hr	0	0	0	0	0	0
714 hr	0	0	0	0	0	0
720 hr	0	0	0	0	0	0
726 hr	0	0	0	0	0	0
732 hr	0	0	0	0	0	0
738 hr	0	0	0	0	0	0
744 hr	0	0	0	0	0	0
750 hr	0	0	0	0	0	0
756 hr	0	0	0	0	0	0
762 hr	0	0	0	0	0	0
768 hr	0	0	0	0	0	0
774 hr	0	0	0	0	0	0
780 hr	0	0	0	0	0	0
786 hr	0	0	0	0	0	0
792 hr	0	0	0	0	0	0
798 hr	0	0	0	0	0	0
804 hr	0	0	0	0	0	0
810 hr	0	0	0	0	0	0
816 hr	0	0	0	0	0	0
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828 hr	0	0	0	0	0	0
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840 hr	0	0	0	0	0	0
846 hr	0	0	0	0	0	0
852 hr	0	0	0	0	0	0
858 hr	0	0	0	0	0	0
864 hr	0	0	0	0	0	0
870 hr	0	0	0	0	0	0
876 hr	0	0	0	0	0	0
882 hr	0	0	0	0	0	0
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906 hr	0	0	0	0	0	0
912 hr	0	0	0	0	0	0
918 hr	0	0	0	0	0	0
924 hr	0	0	0	0	0	0
930 hr	0	0	0	0	0	0
936 hr	0	0	0	0	0	0
942 hr	0	0	0	0	0	0
948 hr	0	0	0	0	0	0
954 hr	0	0	0	0	0	0
960 hr	0	0	0	0	0	0
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